

SOV/20-125-1-30/67

Investigation of the Crystal Structure of Normal Paraffins  $n\text{-C}_{30}\text{H}_{62}$   
and  $n\text{-C}_{32}\text{H}_{66}$  at High Pressure

$n\text{-C}_{32}\text{H}_{66}$  at high quasihydrostatic pressure. Lithium served as pressure-transferring medium. The roentgenograms taken as above by means of the same X-ray chambers clearly point to a reversible variation of the crystal structures  $n\text{-C}_{30}\text{H}_{62}$  and  $n\text{-C}_{32}\text{H}_{66}$  at high pressure. The roentgenograms of  $n\text{-C}_{30}\text{H}_{62}$  and  $n\text{-C}_{32}\text{H}_{66}$  taken at high quasihydrostatic pressure

(7000 - 10000  $\text{kg/cm}^2$ ) correspond to the two-phase systems R + T and at the same time they contain the lines of the R- and T-subcells. The author thanks Professor L. F. Vereshchagin and Professor A. I. Kitaygorodskiy for interest displayed in the present paper and L. V. Fedin for assistance in evaluating the results. There are 3 figures, 4 tables, and 13 references, 7 of which are Soviet.

ASSOCIATION: Institut fiziki vysokikh davleniy Akademii nauk SSSR  
(Institute for the Physics of High Pressures of the  
Card 4/5 Academy of Sciences, USSR)

5.4100  
5.1600

68984

AUTHORS: Kabalkina, S.S., Vereshchagin, L.P. S/020/60/131/02/023/071

B013/B011

TITLE: X-Ray Study of the Linear Compressibility of Graphite at Pressures  
of up to 16,000 kg/cm<sup>2</sup>

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol 131, Nr 2, pp 300-302 (USSR)

ABSTRACT: The present paper describes the direct determination of the compressibility  $k_{||} = \frac{1}{c} \frac{\partial c}{\partial P}$  (in parallel with the hexagonal axis) of artificial, spectroscopically pure graphite and of Ceylon graphite at high pressures (up to 16,000 kg/cm<sup>2</sup>) by using the method of X-ray diffraction. The artificial graphite was studied in a high-pressure X-ray chamber (Fig 1). This chamber can be conveniently used for pressures of up to 14,000 to 16,000 kg/cm<sup>2</sup> which can be maintained for several days. By means of the box used in the chamber four pictures may be obtained per film. Figure 3 shows four film pictures of graphite at different pressures. These X-ray pictures contain the lines  $0002_{\alpha}$  and  $0002_{\beta}$  which were used to determine c at various pressures P. In order to check the data obtained, also artificial graphite was investigated in the same pressure range, but in another type of high-pressure X-ray chamber. In this chamber Nr 2 Ceylon graphite was also investigated, at pressures of up to 10,000 kg/cm<sup>2</sup>. Table 1 gives the  $\Delta c/c$  values of artificial and Ceylon

Card 1/3

68984

X-Ray Study of the Linear Compressibility of Graphite    S/020/60/131/02/023/071  
at Pressures of up to 16,000 kg/cm<sup>2</sup>    D013/D011

graphite for various pressures. In good approximation  $\frac{4c}{c} = a \cdot 10^{-7} P - b \cdot 10^{-12} P^2$  holds. The coefficients  $a = 28$  and  $b = 45$  were determined by the method of least squares. According to the data found, Ceylon- and artificial graphite have the same compressibility. The volume compressibility  $k$  of graphite is essentially determined by the compressibility  $k_H$ , which is a consequence of the weak van der Waals interactions between the layers. The van der Waals radius of the carbon atom at high pressure can be estimated from the data of this paper.  $R_C = 1.63 \text{ \AA}$  holds when  $P = 15,000 \text{ kg/cm}^2$  and  $R_C = 1.68 \text{ \AA}$  when  $P = 1 \text{ kg/cm}^2$  (cf. Table 3). Thus,  $R_C$  decreases under the effect of high pressure much less than the respective van der Waals radius  $R_H$  of the hydrogen atom. There are 4 figures, 3 tables, and 5 references, 1 of which is Soviet.

ASSOCIATION: Institut fiziki vysokikh davlenii Akademii nauk SSSR (Institute of High Pressure Physics of the Academy of Sciences of the USSR)

PRESENTED: November 4, 1959, by G.V. Kurdyumov, Academician  
Card 2/3

Card 3/3

KABALKINA, S.S.; VERESHCHAGIN, L.F.

X-ray examination of the linear compressibility of boron nitride  
at pressures up to 16,000 kg./cm<sup>2</sup>. Dokl.AN SSSR 134 no.2:  
330-332 S '60. (MIRA 13:9)

1. Institut fiziki vysokikh davleniy Akademii nauk SSSR.
2. Chlen-korrespondent AN SSSR (for Vereshchagin).  
(Boron nitride--Spectra)

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S/192/61/002/001/001/006  
B107/B218

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(1043,1153,2209)

AUTHORS: Kabalkina, S. S. and Troitskaya, Z. V.TITLE: Radiographic study of n-paraffin  $C_{34}H_{70}$  at pressures of up to  
16,000 kg/cm<sup>2</sup>

PERIODICAL: Zhurnal strukturnoy khimii, v. 2, no. 1, 1961, 27-32

TEXT: The design of the camera used is described in Ref. 1 (S. S. Kabalkina, L. F. Vereshchagin, Dokl. AN SSSR, 131, no. 2, 300, (1960)). The sample was put into a beryllium cone and covered with a thin layer of lithium. The pressure was transmitted by benzene and measured with a manganin pressure gauge ( $\pm 100$  kg/cm<sup>2</sup>). The X-ray pictures were taken with X-ray tubes fitted with a copper anode. The camera had a diameter of 86 mm. The authors found that at high pressures the rhombic modification (R) of n- $C_{34}H_{70}$  partly passes into a triclinic modification (T). This transformation is irreversible at low pressures. The compressibility of the rhombic modification was calculated: for the range of up to 16,000 kg/cm<sup>2</sup>, the following equations hold:

$$\Delta a/a = 74 \cdot 10^{-7} P - 140 \cdot 10^{-12} P^2,$$

$$\Delta b/b = 70 \cdot 10^{-7} P - 150 \cdot 10^{-12} P^2.$$

Card 1/6

Radiographic study ...

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B107/B218

(cf. Figs. 2 and 3). The authors also calculated the intermolecular distances H ... H in the n-C<sub>34</sub>H<sub>70</sub> crystal at various pressures (Table 3). For this purpose, the following values were assumed: C-H 1.12 Å (Ref. 5: B. K. Vaynshteyn, A. I. Lobachev, M. M. Stasova, Kristallografiya, 2, 452 (1958)), C-C 1.53 Å; distance between the C atoms in the chain which are not bound by valency - 2.54 Å,  $\varphi_b = 41.2^\circ$ ,  $\epsilon = 112^\circ$  (Ref. 6: P. W. Teare. Acta crystallogr., 12, 294 (1959)). Further investigations dealt with the formation of the triclinic phase. Mixtures of n-C<sub>34</sub>H<sub>70</sub> and n-C<sub>20</sub>H<sub>42</sub> served as standard series for the quantitative evaluations of the X-ray pictures. The intensities of line (110) for the R phase, and those of the line with  $d = 3.56$  Å for the T phase were measured. The dependence on the concentration of the T phase is shown in Fig. 4. Since the peaks are laterally overlapping, the heights of the peaks of the photometric curves were measured. Formation of the T phase begins at 5,000 kg/cm<sup>2</sup>; at 12,000 kg/cm<sup>2</sup>, its fraction amounts to about 40%, at 14,000 kg/cm<sup>2</sup>, it is about 50%. From one

Card 2/6

89998

9/192/61/002/001/001/006

B107/B218

Radiographic study ...

sample, the authors obtained: 10% at 5,200 kg/cm<sup>2</sup>, 20% at 9,800 kg/cm<sup>2</sup>, and 50% at 14,500 kg/cm<sup>2</sup>. In some cases, the fraction of the T phase reached even 65% at 6,000-8,000 kg/cm<sup>2</sup>. Since the T phase is stable at p = 1 atm and room temperature, the authors assume that the difference of the free energy between R and T is very small. The T phase vanishes on heating. The activation energy T → R was determined and found to be U = 16 ± 4 kcal/mole (Fig. 6). For this purpose, the samples were kept in the thermostat for half an hour at a certain temperature; the concentration of T was radiographically determined at the beginning and after the experiment. A comparison of the experimental results of n-C<sub>34</sub>H<sub>70</sub> with previous data on n-C<sub>30</sub>H<sub>62</sub> and n-C<sub>32</sub>H<sub>66</sub> (Ref. 2: S. S. Kabalkina. Dokl. Akad. Nauk SSSR. 125, 114 (1959)), shows that the latter apparently only occur in the R modification. It is, however, possible that this discrepancy is due to a different action of pressure since the authors of Ref. 2 used a different experimental unit. To check this assumption, the authors of the present paper again investigated samples of n-C<sub>30</sub>H<sub>62</sub> and n-C<sub>32</sub>H<sub>66</sub> and found that in both samples a partial formation of the T phase occurred. Apart from the mere hydrostatic pressure in the

Card 3/6

Radiographic study . . .

87998  
S/192/61/002/001/001/006  
B107/B218

experimental unit, also the wall pressure of the plastically deformed beryllium acted upon the sample, which favored the formation of the T phase. The formation of the T phase of  $n\text{-C}_{30}H_{62}$  and  $n\text{-C}_{32}H_{66}$  is reversible. The different purity of the samples may serve as an explanation for this phenomenon. It might, however, also be that the residual effect is influenced by the potential barrier of the transition  $T \rightarrow R$ , which increases with increasing number of atoms. The authors thank Corresponding Member L. F. Vereshchagin for discussion, and V. G. Gorshkova for assistance. There are 9 figures, 6 tables, and 7 references: 5 Soviet-bloc. The two references to English language publications read as follows: A. Müller, Proc. Roy. Soc., A 127, 417 (1950); P. W. Teare, Acta crystallogr., 12, 294 (1959).

ASSOCIATION: Institut fiziki vysokikh davleniy AN SSSR (Institute of the Physics of High Pressures, AS USSR)

SUBMITTED: February 3, 1960

Card 4/6

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Radiographic study ...

Figs. 2 and 3: Dependence of the linear compressibility  $\Delta a/a$  and  $\Delta b/b$  of  $n\text{-C}_{34}\text{H}_{70}$  on pressure. (x)  $P$ ,  $\text{kg}/\text{cm}^2$ .

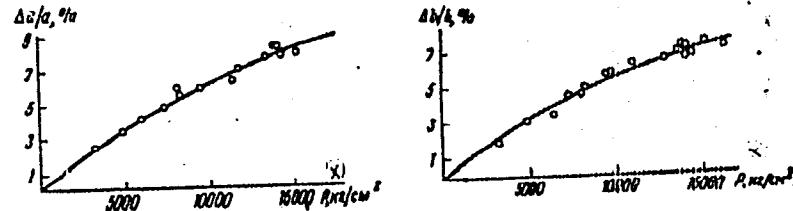


Table 3: Shortest intermolecular distances  $H \dots H$ ,  $\text{\AA}$ , in the  $C_{34}H_{70}$  crystal at high pressures (for denotations of. Ref. 7: A. I. Kitaygorodskiy, Yu. V. Myunkh. Dokl. AN SSSR, 121, no. 2, 291 (1958)).

Légend: 1) atom; 2) pressure,  $\text{kg}/\text{cm}^2$ .

Card 5/6

АТОМЫ (1)	(2) Давление, $\text{kg}/\text{cm}^2$						
	3000	6100	8000	10700	12000	13400	15500
$H_1 \dots H_2$	2,40	2,30	2,25	2,23	2,20	2,18	2,16
$H_2 \dots H_4$	2,83	2,72	2,68	2,64	2,67	2,63	2,61
$H_1 \dots H_4$	2,41	2,30	2,24	2,21	2,19	2,20	2,14

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S/192/61/002/001/001/006  
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Radiographic study ...

Figure 4: Dependence of  $I_R/I_T$  on the concentration of the T phase ( $C_T$ , %) in the mixture R + T.

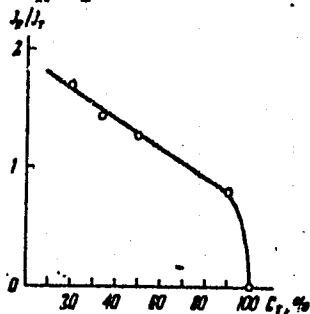
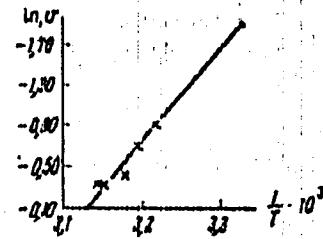


Figure 6: Dependence of  $\ln v$  on  $1/T$ .  
v is the transition rate  $T \rightarrow R$ .



Card 6/6

KABALKINA, S.S. (Moscow)

X-ray diffraction examination of the crystalline structure of  
urea and thiourea at high pressure. Zhur. fiz. khim. 35 no.2  
276-283 p '61. (MIRA 16:7)

1. Institut fiziki vysokikh davleniy.  
(Urea) (X-ray crystallography)

KABALKINA, S.S.

Some characteristics of the compressibility of molecular  
crystals. Fiz. tver. tela 4 no.11:3124-3128 N '62.  
(MIRA 15:12)

1. Institut fiziki vysokikh davleniy AN SSSR, Moskva.  
(X-ray crystallography)

KABALKINA, S.S., kand.fiz.-matem.nauk (Moskva)

Diamonds in meteorites. Priroda 51 no.6:110 Ju '62. (MIRA 15:6)  
(Diamonds) (Meteorites)

5  
S/020/62/143/004/010/027  
3  
B104/B102  
10

AUTHORS: Kabalkina, S. S., and Vereshchagin, L. F., Corresponding  
Member AS USSR

TITLE: An X-ray diffraction study of the effects of hydrostatic  
pressure up to 18,000 kg/cm<sup>2</sup> on the structure of lead titanate

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 143, no. 4, 1962, 818 - 821

TEXT: The investigation was carried out at room temperatures by means of  
a special high-pressure chamber (Fig. 2) with a fine-focus tube and copper  
anode. The ceramic samples were delivered by the Fiziko-khimicheskiy  
institut im. L. Ya. Karpova (Physicochemical Institute imeni L. Ya. Karpova)  
and had the following lattice parameters:  $a = 3.903 \text{ \AA}$ ,  $c = 4.154 \text{ \AA}$ ,  
 $c/a = 1.064$ . With increasing pressure a decrease of the cell tetragonality

and a lowering of the Curie point are observed. At 18,000 kg/cm<sup>2</sup>  $c$  is  
considerably smaller ( $\Delta c = -0.10 \text{ \AA}$ ) and  $a$  is slightly greater, ( $\Delta a = +0.1$   
 $- +0.01 \text{ \AA}$ ). The relative change of  $c$  is a linear function of pressure  $p$ :

$\Delta c/c = 14.3 \cdot 10^{-7} \cdot p$ . The change of parameters with increasing pressure

Card 1/2

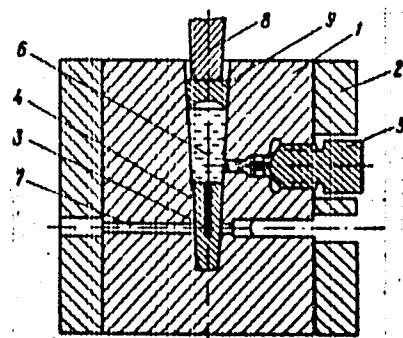
### An X-ray diffraction ...

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B104/B102

coincides qualitatively with their change as temperature functions. At  $480^{\circ}\text{C}$   $4c = -0.129 \text{ \AA}$  and  $4a = 0.048 \text{ \AA}$ . High pressure and high temperature lower the polarization. The compressibility of the ferroelectric phase of  $\text{PbTiO}_3$  is assumed to be a superposition of normal compression and deformation combined with a decrease of polarization under pressure. There are 4 figures and 1 table.

SUBMITTED: December 29, 1961

Fig. 2. High-pressure chamber.  
 Legend: (1) internal cylinder; (2) external cylinder; (3) sample; (4) beryllium cone; (5) lead-in, to which a manganin manometer is connected; (6) liquid; (7) diaphragm; (8) piston.



Card 2/2

3/020/62/144/005/004/017  
B125/B104

15.2520  
AUTHORS: Kabalkina, S. S., Vereshchagin, L. F., Corresponding  
Member AS USSR, and Shulenin, B. M.

TITLE: X-ray study of the effect of hydrostatic pressure on the  
structure of barium titanate

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 144, no. 5, 1962,  
1019-1021

TEXT: The effect of hydrostatic pressure on the structure of barium titanate was studied at room temperature. X-ray pictures with reflection angles of 60-80° were recorded under pressures of 1-6000 kg/cm<sup>2</sup>, using a K<sup>2</sup>OC (KROS) X-ray camera and an auxiliary high-pressure unit. The barium titanate specimens (lattice constants,  $a = 3.993 \text{ \AA}$  and  $c = 4.032 \text{ \AA}$ ; Curie temperature  $T_{\text{Cur}} = 118^\circ\text{C}$ ) had been supplied by the Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physicochemical Institute imeni L. Ya. Karpova). The values of  $a$ ,  $c$ , and  $T_{\text{Cur}}$  at high pressures were determined using the line group with  $h^2+k^2+l^2 = 26$  ( $\theta = 77-80^\circ$ ).

Cará 1/3

X-ray study of the effect of ...

S/020/62/144/005/004/017

B125/B104

The X-ray pattern of  $\text{BaTiO}_3$  is shifted under high pressure but returns to its original position when the specimen is unloaded.  $(1/p)\Delta V/V$  was found to be  $15.2 \cdot 10^7 \text{ cm}^2/\text{kg}$ . As the pressure is increased from 1 to 6000  $\text{kg/cm}^2$ ,  $c$  decreases from 4.033 to 4.020  $\text{\AA}$ ,  $a$  from 3.993 to 3.990  $\text{\AA}$ , and  $c/a$  from 1.010 to 1.0085, while  $\Delta a/a$  increases from 0 to  $\sim 0.13\%$ , and  $\Delta c/c$  from 0 to  $0.25\%$ . Most of these changes are linear in first approximation. Decrease of the Curie temperature diminishes the "tetragonality" of the lattice. The pressure dependence of  $a$ ,  $c$ , and  $T_{\text{C}}$  in  $\text{BaTiO}_3$  is qualitatively in accordance with the dependence of the respective quantities of the solid solution  $(\text{Ba}-\text{Sr})\text{TiO}_3$  on its content of  $\text{SrTiO}_3$ . The compressibility  $\Delta c/c$  of  $\text{PbTiO}_3$  is almost four times that of  $\text{BaTiO}_3$ . The ferroelectric phase becomes compressible by the superposition of deformation and normal compression, attended by a decrease in polarization. The stretching of the  $\text{PbTiO}_3$  lattice in the  $a$ -direction is of larger amount than the normal compression, and that of the  $\text{BaTiO}_3$

Card 2/3

ACCESSION NR: AP4009138

S/0056/63/045/006/2073/2076

AUTHORS: Kabalkina, S. S.; Vereshchagin, L. F.; Shulenin, B. M.

TITLE: Phase transitions in tellurium at high pressures

SOURCE: Zhurnal eksper. i teoret. fiziki, v. 45, no. 6, 1963, 2073-2076

TOPIC TAGS: tellurium high pressure, phase transition, reversible phase transition, tellurium crystal structure, x ray diffraction pattern, x ray diffraction, Patterson Harker section, chain structure, laminar structure

ABSTRACT: An x-ray diffraction study of tellurium was carried out at pressures up to 100 kbar in order to find how the crystal structure of tellurium changes at high pressure. Two reversible phase transitions were observed, at 15--20 and 42--45 kbar. At 15 kbar tellurium is shown to undergo a transition from the chain structure

Card 1/2

ACCESSION NR: AP4009138

A8 to the laminar structure A7, and the reasons why this transition was not detected by Bridgman (Proc. Am. Acad. Arts Sci. v. 60, 366, 1925) are explained. The structure of the second phase transition at 42--45 kbar could not be ascertained, but the constancy of the x-ray diffraction patterns above 45 kbar seems to cast doubts on the 69 kbar phase transition detected by Bridgman (Proc. Am. Acad. Arts Sci. v. 74, 425, 1942). Orig. art. has 2 figures and 2 tables.

ASSOCIATION: Institut fiziki vysokikh davleniy Akademii nauk SSSR  
(High Pressure Physics Institute, Academy of Sciences SSSR)

SUBMITTED: 11Sep63 DATE ACQ: 02Feb64 ENCL: 00

SUB CODE: PH NO REF SOV: 002 OTHER: 005

Card 2/2

L 15468-63

EWP(q)/EWP(m)/BDS AFFTC/ASD JD/JG

ACCESSION NR: AP3005431

S/0020/63/151/005/1068/1070

AUTHORS: Kabalkina, S. S.; Troitskaya, Z. V.

TITLE: Investigation of the structure of cadmium sulfide at high pressures up to 90 kilobars

SOURCE: AN SSSR. Doklady\*, v. 151, no. 5, 1963, 1068-1070

TOPIC TAGS: high-pressure CdS structure, X-ray diffraction, CdS, Cd, cadmium, high-pressure

ABSTRACT: The investigation was conducted by X-ray diffraction in order to determine the structure of the new phase of CdS produced by high pressure at its equilibrium point. A Jamieson-Lawson type of X-ray high pressure chamber (J. Appl. Phys. 33, 1962, 776) was used. The Debye diffraction pattern of CdS at various pressures are given in Figure 2. The lattice constants are given in Table 1. The phase transition starts at a pressure of 18 kilobars and ends at 35 kilobars. It is concluded that the original structure of CdS is transformed into that of NaCl. "The authors express their deep gratitude

Card 1/2

L 15468-63

ACCESSION NR: AP3005431

to their scientific supervisor L. F. Vereshchagin, corr. Member of the AS SSSR, for help with the new methods, constant attention to the work, and participation in the discussion of results." Orig. art. has: 4 figures and 1 table.

ASSOCIATION: Institut fiziki vy\*okikh davleniy Akademii nauk SSSR  
(Institute of high-pressure physics, Academy of sciences, SSSR)

SUBMITTED: 20Mar63

DATE ACQ: 06Sep63

ENCL: 00

SUB CODE: PH, EL

NO REF SOV: 001

OTHER: 007

Card 2/2

KABALKINA, S.S.; VERESHCHAGIN, L.F.; MYLOV, V.P.

Phase transitions in antimony under high pressure. Dokl. AN SSSR  
152 no.3:585-586 S '63. (MIRA 16:12)

1. Institut fiziki vysokikh davleniy AN SSSR. 2. Chlen-korrespondent AN SSSR (for Vereshchagin).

KABALKINA, S.S.; POPOVA, S.V.; SEREBRYANAYA, N.R.; VERESHCHAGIN, L.F.

New modification of  $Ag_2O$  with a laminar structure. Dokl.  
AN SSSR 152 no.4; 853-854 0 '63. (MIRA 16:11)

1. Institut fiziki vysokikh davleniy AN SSSR. 2. Chlen-  
korrespondent AN SSSR (for Vereshchagin).

KABALKINA, S.S.; POPOVA, S.V.

Phase transitions in zinc and manganese fluorides at high pressures and temperatures. Dokl. AN SSSR 153 no.6:1310-1312 D '63. (MIRA 17:1)

1. Institut fiziki vysokikh davleniy AN SSSR. Predstavлено академиком N.V. Belovym.

ACCESSION NR: AP4043610

S/0056/64/047/002/0414/0418

AUTHORS: Vereshchagin, L. F.; Kabalkina, S. S.

TITLE: Phase transitions in antimony at high pressures

SOURCE: Zh. eksper. i teor. fiz., v. 47, no. 2, 1964, 414-418

TOPIC TAGS: high pressure effect, antimony, single crystal, cubic symmetry, phase transition

ABSTRACT: This is a sequel of earlier work by the authors (with V. P. My\*lov, DAN SSSR, v. 152, 585, 1963), except that single-crystal antimony was used with A7 structure at room temperature. X-ray diffraction studies have disclosed the presence of two reversible phase transitions: SbI  $\rightarrow$  SbII (at 70 kbar into a primitive cubic structure) and SbII  $\rightarrow$  SbIII (at 85 kbar  $\rightarrow$  into a close packed hexagonal structure). The pressure at which the phase transition took place could be determined by plotting the ratio of the

Card 1/2

L 14383-65 EWT(1)/EWT(2)/EPF(2)/EPF(3)-1/EPF(4)/EPF(5)/EPF(6)/EPF(7)/EPF(8)  
P2-5/Pf-4/Pr-4/Ps-4/Pu-4 IJP(1)/AFM1/A173(1)-5/A2D0(1)-15D/A173(1)-15D/  
ACCESSION NR: AP4047943 WA/HW/GG S/002D/64/158/005/1061/1063

AUTHORS: Vereshchagin, L. F. (Corresponding member AN SSSR);  
Kabalkina, S. S.; Troitskaya, Z. V.

TITLE: Effect of high pressure on the structure of gallium and  
indium

SOURCE: AN SSSR. Doklady\*, v. 158, no. 5, 1964, 1061-1063

The effect of high pressure on the crystal structure of gallium and indium has been studied by the methods of X-ray diffraction analysis.

The effect of pressure on the structure of gallium was studied at the temperature of 1000°K. The pressure was increased up to 1100 atm. The

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SUB CODE: ME, SS

NR REF SDV: 001

OTHER: 009

Card 2/2

ACC NR: AP6002711

SOURCE CODE: UH/0056/65/049/006/1728/1732

AUTHOR: Vereshchagin, L. F.; Kabalkina, S. S.; Kotilevets, A. A.

ORG: Institute of High Pressure Physics, Academy of Sciences SSSR (Institut fiziki vysokikh davlenii Akademii nauk SSSR)

TITLE: Phase transition in  $MnF_2$  at high pressures

SOURCE: Zhurnal eksperimental'noi teoreticheskoy fiziki, v. 49, no. 6, 1965, 1728-1732

phase transition, metastable phase, x-ray analysis

TOPIC TAGS: manganese compound, fluoride, crystal lattice structure, pressure effect

ABSTRACT: This is a continuation of earlier work on the same subject, with an aim at determining the conditions under which  $MnF_2$  with an  $\alpha\text{-PbO}_2$  structure is formed. To this end, the effect of high pressure on the structure of  $MnF_2$  was measured at pressures up to 80 kbar. Whereas in the earlier investigation the x-ray structure could be determined only after removal of the pressure, the method in the present study made it possible to obtain x-ray patterns directly at high pressures. The method is described elsewhere (S. S. Kabalkina and Z. V. Troitskaya, IAN SSSR v. 151, 1068, 1963). The results show that at pressures  $p > 20-30$  kbar the initial phase of  $MnF_2$  with rutile structure experiences a reversible phase transition. It is assumed on the basis of the data that the high pressure  $MnF_2$  phase has a distorted structure of the  $CaF_2$  type, which is close to the structure of the tetragonal  $KrO_2$  modification. After removal of the pressure, a metastable phase with a structure of the  $\alpha\text{-PbO}_2$  type

APPROVED FOR RELEASE: 08/10/2001 CIA-RDP86-00513R000619720018-7

Card 1/2

L 25692-66

ACC NR: AP6002711

is formed from the phase which is stable at high pressure. The metastable phase is thus not the high-pressure phase, as was previously assumed. Orig. art. has: 2 figures and 2 tables.

SUB CODE: 20/ SUBM DATE: 12Jul65/ ORIG REF: 004/ OTH REF: 006

Card 2/2

I 25789-66 EPF(n)-2/EWP(k)/EWT(1)/EWT(m)/EWA(d)/EWP(t) IJP(c) GG/WW/JD

ACC NR: AP6015920

SOURCE CODE: UR/DO20/65/163/002/0326/0328

AUTHOR: Vereshchagin, L. F. (Corresponding member AN SSSR); Kabalkina, S. S.;  
Lityagina, L. M.

34  
B

ORG: Institute of High-Pressure Physics, AN SSSR (Institut fiziki vysokikh davlenii  
AN SSSR)

TITLE: Investigation of the effect of high pressure on the structure of tin oxide

SOURCE: AN SSSR. Doklady, v. 163, no. 2, 1965, 326-328

TOPIC TAGS: van der Waals force, tin compound, crystal structure

ABSTRACT: Ordinarily  $\text{SnO}$  has a  $\text{PbO}$ -type structure, in which the  $\text{O}$  atoms in the  $\text{SnO}$  structure form square lattices and the tin atoms are either above or under the centers of the squares. Thus, each  $\text{O}$  atom is in the center of a tetrahedron of  $\text{Sn}$  atoms and each  $\text{Sn}$  atom occupies the vertex of a tetragonal pyramid based on a square of four  $\text{O}$  atoms.

Since  $\text{SnO}$  has a plane of  $\text{O}$  atoms between two planes of  $\text{Sn}$  atoms, it has a layered structure bound together by weak van der Waals forces and by ionic and covalent bonds.

The authors made x-ray studies of the  $\text{SnO}$  structure at room temperature and under pressures up to 100 kbar. The experiments showed that  $\text{SnO}$  undergoes

Card 1/2

L 25789-66

ACC NR: AP6015920

a reversible phase transition under high pressure (40 to 50 kbar) with six lines appearing that are identical to the wurtzite-type structure. The cubic packing of the tin atoms is rearranged into a denser hexagonal packing under pressure, while the corresponding polygon, the tetragonal pyramid, becomes a tetrahedron. It can be assumed that under even higher pressure the wurtzite structure will be changed into an NaCl-type structure. Orig. art. has: 3 figures and 1 table. [JPRS]

SUB CODE: 20, 07 / SUBM DATE: 06Apr65 / ORIG REF: 002 / CTH REF: 006

Card 2/2 CC

L 7086-66 EWT(m)/ETC/EWG(m)/EWP(t)/EWP(k)/EWP(b)/EWA(h)/EWA(c) IJP(c)  
ACC NR: AP5028273 RDW/JD/HW SOURCE CODE: UR/0020/65/165/002/0297/0298

AUTHOR: Vereshchagin, L. F. (Corresponding member AN SSSR); Koval'chuk, B. S.; Smirnov, B. M.

ORG: Institute of Physics of High Pressures, Academy of Sciences, SSSR (Institut fiziki vysokikh davleniy Akademii nauk SSSR)

TITLE: X-ray diffraction investigation of the compressibility of hexagonal selenium up to 15 kbar

SOURCE: AN SSSR. Doklady, v. 165, no. 2, 1965, 297-298

TOPIC TAGS: pressure effect, superhigh pressure, selenium, x ray diffraction study

ABSTRACT: Earlier studies by the authors on single-crystal tellurium (ZhETF v. 45, 2073, 1963) are extended to include hexagonal selenium. The x-ray diffraction study was carried out in a special chamber, described elsewhere (DAN v. 143, 818, 1962), in which the high-pressure vessel was a cone of metallic beryllium with a channel 0.4 mm in diam) for the sample. Aviation gasoline was used to transmit the pressure, which was measured with a manganin manometer accurate to  $\pm 100$  bar. The hexagonal selenium modification was prepared from the amorphous one at 60 kbar at 400°. The results (Fig. 1) show that selenium has a highly anisotropic compressibility, similar to that of tellurium. The results can be attributed to the fact that compression brings the lattice structures of the two substances closer to cubic. The pressure dependence of the compressibility agrees well with data previously obtained by P. W. Bridgman (Proc. Am.

Card 1/2

UDC: 539.26

L 7086-66

ACC NR: AP5028273

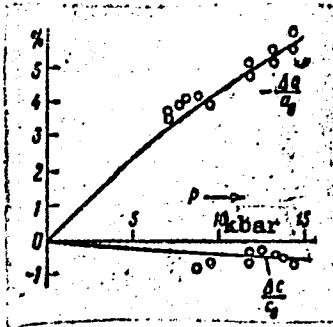


Fig. 1. Linear compressibility of selenium vs pressure

Acad. Sci. v. 74, 425, 1942). Orig. art. has: 3 figures and 3 tables. [02]

SUB CODE: SS/ SUBM DATE: 12Aug65/ ORIG REF: 003/ OTH REF: 003 ATD PRESS: 4143

nw  
Card 2/2

L 21012-66 EWT(m)/T/EWP(t)/EWA(h) IJP(e) JD

ACCESSION NR: AP5018741

UR/0020/65/163/002/0326/0328

AUTHOR: Vereshchagin, L. F. (Corresponding member AN SSSR); Kubalkina, S. S.;  
Lityagina, L. M.

15  
14

B

TITLE: Investigation of the influence of high pressure on the structure of tin oxide

SOURCE: AN SSSR. Doklady, v. 163, no. 2, 1965, 326-328

TOPIC TAGS: pressure effect, tin compound, crystal lattice structure, phase transition

ABSTRACT: An x-ray investigation of the structure of  $\text{SnO}$  was made at room temperature and pressures up to 100 kbar. A special x-ray camera (DAN v. 151, no. 5, 1068, 1963; J. Jamieson and A. W. Lawson, J. Appl. Phys. v. 33, no. 3, 776, 1962) with molybdenum radiation was used, the main part of which was a pellet made of amorphous boron and a channel for the sample. The pressure could be determined accurate to  $\pm 5$  kbar. The results show that at high pressures  $\text{SnO}$  experiences a reversible phase transition. In most cases this transition occurs at 40-50 kbar, although in some experiments it was observed at 15-20 kbar. The unit cell parameters of the high-pressure phase are  $a = 3.42 \pm 0.02 \text{ \AA}$  and  $c = 5.62 \pm 0.04 \text{ \AA}$ . A sudden change in volume of  $7.0 \pm 5\%$  was observed during the phase transition (at

Card 1/2

L 21017-66

ACCESSION NR: AP5018741

40 kbar). The two phases differ from each other in the order of arrangement of the crystal layers and the arrangement of the nearest neighbors of the tin atoms. The results show also that the phase transition is reconstructive, in that the Sn...O bond in the low-pressure phase is destroyed during the transition and a new bond is produced. It is suggested in analogy with earlier data by others that at higher pressures SnO will experience a polymorphic transition from a wurtzite structure to a NaCl structure. Orig. art. has: 3 figures and 1 table.

ASSOCIATION: Institut fiziki vysokikh davleniy Akademii nauk SSSR (Institute of High Pressure Physics, AN SSSR)

SUBMITTED: 06Apr65

ENCL: 00

SUB COMB: 68

NR REF Sov: 001

OTHER: 007

Card 2/2 BK

L-04490-67 EWT(m)/T/EWF(t)/ETI LJP(c) JD

ACC NR: AP6031429

SOURCE CODE: UR/0056/66/051/002/0377/0382

AUTHOR: Kabalkina, S. S.; Vereshchagin, L. F.; Kotilevets, A. A. 15  
B

ORG: Institute of Physics of High Pressures, Academy of Sciences SSSR  
(Institut fiziki vysokikh davleniy Akademii nauk SSSR)

TITLE: Phase transition in  $\text{TeO}_2$  under high pressure

SOURCE: Zh eksper i teor fiz, v. 51, no. 2, 1966, 377-382

TOPIC TAGS: phase transition, high pressure research, high pressure, tellurium dioxide, x ray diffraction

ABSTRACT: The effect of high pressure on the structure of the tetragonal phase of  $\text{TeO}_2$  is investigated. An x-ray diffraction study of the structure of  $\text{TeO}_2$ I at room temperature and under pressures up to 100 kbar was carried out in a special x-ray chamber which included an amorphous boron pellet. The experiments show that at  $p > 30$  kbar,  $\text{TeO}_2$ I undergoes a reversible phase transition of the first kind. According to the data obtained, the high-pressure phase ( $\text{TeO}_2$ II) possesses a rhombic lattice cell with the following parameter values at  $p = 60$  kbar:  $a = 4.22 \text{ \AA}$ ,  $b = 4.84 \text{ \AA}$ ,  $c = 3.67 \text{ \AA}$ ,  $z = 2$ ,  $\rho = 7.07 \text{ g/cm}^3$ ; it belongs to the Fedorov Pnnm group. It is suggested that the high-pressure phase

Card 1/2

L 05490-69

ACC NR: AP6031429

is of the  $\text{CaCl}_2$  type. The effect of pressure on the parameters of the unit cells of the  $\text{TeO}_2\text{I}$  and  $\text{TeO}_2\text{II}$  phases is evaluated. Orig. art. has: 4 figures and 2 tables. (CS)

SUB CODE: 20/ SUBM DATE: 25Jan66/ ORIG REF: 003/ OTH REF: 015  
ATD PRESS: 5083

Card 2/2 *egh*

ACC NR: AP6037065

(A)

SOURCE CODE: UR/0056/66/051/005/1358/1362

AUTHOR: Kabalkina, S. S.; Vereshchagin, L. P.; Serebryanaya, N. R.

ORG: Institute of Physics of High Pressures, Academy of Sciences, SSSR (Institut fiziki vysokikh davlenii Akademii nauk SSSR)

TITLE: Germanium telluride phase transformation under high pressure

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 51, no. 5, 1966,  
1358-1362

TOPIC TAGS: germanium telluride, ~~germanium telluride~~ crystal structure, ~~germanium telluride~~ phase transition, phase transformation, pressure effect

ABSTRACT: The effect of high pressures up to 100 kbar on the crystal structure of GeTe has been investigated. A phase transition from a rhombohedral phase GeTeI (A7-type) to a cubic phase of GeTeII (NaCl type) was observed. X-ray diffraction analysis showed that at 35 kbar, the ratio c/a changes from 1.27 (GeTeI) to 1.224 (GeTeII), involving a volume change of 3%. In view of the presence of a continuous transition GeTeI  $\rightarrow$  GeTeII at 400C, it is assumed that a critical point exists on the Ge-Te phase diagram. Orig. art. has: 5 figures and 1 table.

SUB CODE: 2D, II / SUBM DATE: 16Jun66/ ORIG REF: 007/ OTH REF: 005/

Card 1/1

ACC NR: AP7005581

SOURCE CODE: UR/0020/67/172/002/0313/0316

AUTHOR: Kabalkina, S. S.; Kolobyanina, T. N.; Vereshchagin, L. F. (Academician)

ORG: Institute of High Pressure Physics, Academy of Sciences, SSSR (Institut fiziki vysokikh davleniy Akademii nauk SSSR)

TITLE: X ray diffraction investigation of the crystal structure of iodine at high pressure

SOURCE: AN SSSR. Doklady, v. 172, 2, 1967, 313-316

TOPIC TAGS: x ray diffraction study, iodine, high pressure research, crystal lattice structure, molecular crystal

ABSTRACT: The tests on iodine were made because at high pressure it is one of the few elements having a molecular structure, and may be the only element in which structure investigations can be made at room temperature. The authors carried out an x-ray diffraction study of its structure at room temperature and pressures up to 60 kbar, using a procedure described earlier (DAN v. 151, 1068, 1963) and molybdenum radiation. To improve the diffraction pattern, the iodine was tested in powdered form. The observed appearance and disappearance of several lines is reported, as well as coalescence of some lines with variation of pressure. In addition, the pressure dependence of the volume of the iodine and of the parameters of its lattice structure are plotted. The results indicate that pressure does not change the initial rhombic structure, merely distorting it and leading to some rotation of the molecules. It is

Card 1/2

UDC: 539.89

ACC NR: AP7005581

pointed out in the conclusion that in view of the ambiguities involved in the powder method, further research with single crystals is necessary to check on the conclusions concerning the structure of the high-pressure phase of Iodine. Orig. art. has: 4 figures and 2 tables.

SUB CODE: 20/ SUBM DATE: 23Sep66/ ORIG REF: 003/ OTH REF: 011

Card 2/2

KABALOV, A.A.

Veterinary services in the "Vrachovo-Gorki" State Breeding Farm.  
Veterinariia 34 no.8:12-15 Ag '57. (MIRA 10:9)

1. Glavnnyy vetrach plemsovkhosa "Vrachevo-Gorki".  
(Lukhovitsy District (Moscow Province)--Veterinary medicine)

1. KABALOV, A.A.
2. USSR (600)
4. Horseshoeing
7. Greater attention to shoeing shorses on collective farms, Konevodstvo 23 no. 3, 1953.
  
9. Monthly List of Russian Accessions, Library of Congress, APRIL 1953, Uncl.

"APPROVED FOR RELEASE: 08/10/2001

CIA-RDP86-00513R000619720018-7

XABALOV, G.

Fungi as protectors of plants. Nauka i zhizn' 22 no.2:19 F '55.  
(Fungi in agriculture) (MIRA 8:3)

APPROVED FOR RELEASE: 08/10/2001

CIA-RDP86-00513R000619720018-7"

DUBININ, Aleksandr Dmitriyevich; KABAL'SKIY, M.M., kand.tekhn.nauk,  
retsentsent; FURMR, P.Ya., red.

[Bench work techniques] Priemy slesarnykh rabot. Izd.2.,  
ispr. i dop. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.  
lit-ry, 1960. 316 p. (MIRA 13:5)  
(Toolroom practice)

KABAL'SKIY, M. M.

35171. Primenenie Pryamykh Metodov Variatsionnogo Ischisleniya K Nezhaniyuploskoy Zadachi Teorii Plastichnosti. V 80:50 Let Kievsk. Politekhn. In-Tu. Kiev, 1948, s. 615-20

SO: Letopis' Zhurnal'nykh Statey, Vol. 48, Moscow, 1949

KABAL'SKIY, M.M., kand.tekhn.nauk; YEFREMOV, Yu.M., inzh.; SEMENOV,  
V.K., inzh.

Using signaling systems in tunneling by production-line methods.  
Shakht. stroi. 5 no. 2:19-21 F '61. (MIRA 14:2)

1. NIOMSP.

(Mine communication)

KOLMAKOV, V.M., inzh.; ZEFREMOV, Yu.M., inzh.; SAFRONOV, V.B., inzh.;  
KABAL'SKIY, M.M., kand. tekhn. nauk

Semiautomatic coupling for mine cars. Shakht. stroi. 7 no.3:  
27 Mr'63 (MIRA 1987)

1. Nauchno-issledovatel'skiy institut organizatsii i mekhanizatsii stroitel'nogo prilozheniya, g. Kiyev.

L 1779-66 EPA(s)-2/EWT(m)/BWP(j)/T RM  
ACCESSION NR: AP5023919

UR/0171/65/018/004/0429/0430  
541.64+541.339.2

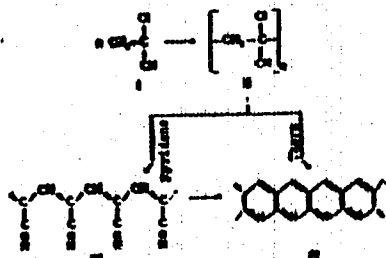
AUTHOR: Chukhadzhyan, G. A.; Kabalyan, Yu. K.; Petrosyan, V. A.

TITLE: Heat treatment product of poly( $\alpha$ -chloroacrylonitrile)

SOURCE: AN ArmeSSR. Izvestiya. Khimicheskiye nauki, v. 18, no. 11, 1965, 129-130

TOPIC TAGS: organic semiconductor, semiconducting polymer

ABSTRACT: A polymer with a conjugated bond system, consisting of naphthalene rings, has been prepared by a simple and easy method:



Card 1/3

E 1779-66

ACCESSION NR: AP5023919

Heat treatment of poly ( $\alpha$ -chloroacrylonitrile) at 150—250°C caused quantitative elimination of HCl with simultaneous intramolecular cyclization of the polycyano-vinylene (III) obtained to form a naphthapyridine type structure (IV). The polymer (IV) was a black powder insoluble in organic solvents or hot acids. The polymer is thermally stable; at 600°C a small amount of gas (apparently, hydrogen) is evolved and then the polymer remains unchanged during prolonged heating (800—1000°C). Measurements of the electrical properties of the pellet samples of the polymer were conducted at 25°C. The data are shown in Table 1 of the Enclosure, which also gives data on some other semiconductors (earlier prepared) for comparative purposes. The data indicate that in electrical properties polymer IV approaches selenium. Orig. art. [S4] has: 1 formula and 1 table.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy i proyektnyy institut polimerov  
(All-Union Scientific Research and Design and Planning Institute of Polymers)

SUBMITTED: 27Feb65

ENCL: 01

SUB CODE: DC, GC

NO REF SOV: 001

OTHER: 001

ATTD PRESS: 4112

Card 2/3

L 1779-66  
ACCESSION NR: AP5023919

ENCLOSURE

01

Table 1.

Polymer	$\epsilon_{\text{v}}$ ( $\text{cm} \cdot \text{cm}$ )	$B_A$ ev
IV	$8 \cdot 10^4$	0.4-0.7
V	$5 \cdot 10^{10}$	1.7
VI	$2 \cdot 10^{11}$ trans	1.66
VII	$10^9-10^4$	0.02

\* Thermal cyclization product of polyacrylonitrile

\*\* Synthesized by polymerization of acetylene over

$\text{Al}(\text{150-C}_4\text{H}_9)_3\text{:TlCl}_4$  at 20°C in heptane.

*mll*  
Card 3/3

KABAN, A.N.; CHERKASOV, L.A.

Automatic control unit with programming by the "pendulum"  
cycle. Avt. i prib. no.4:18-21 O-D '64 (MIRA 18:2)

~~AKIBAHA, T. A.~~  
HATANSON, E.M.; CHALYY, V.P.; KOZACHEK, N.N.; KABAN, A.P.

Electron microscopic and X-ray analyses of dispersed phases of  
lead-tin alloy organosols [with summary in English]. Koll. zhur.  
19 no.3:319-323 My-Je '57. (MERA 10:8)

1. Institut obshchey i neorganicheskoy khimii Akademii nauk USSR,  
Kiyev.  
(Lead--Tin alloys) (Colloids)

NATANSON, E.M.; KABAN, A.P.

Electron microscopic analysis of the dispersed phases of organic  
iron. Ukr. khim. zhur. 24 no.3:404-408 '58. (MIRA 11:9)

1. Institut obshchey i neorganicheskoy khimii AN USSR.  
(Iron) (Colloids) (Electron microscopy)

KURILENKO, O.D.; KABAN, A.P.

Investigating the dielectric properties of aqueous amylose solutions.  
Izv.vys.ucheb.zav.; pishch.tekh. no.1:32-36 '59.

(MIRA 12:6)

1. Kiyevskiy tekhnologicheskiy institut pishchevoy promyshlennosti,  
kafedra fizicheskoy i kolloidnoy khimii.  
(Amyloses--Electric properties)

KABAN, A.P.; KURILENKO, O.D.

Electric conductivity and dielectric constant of amylopectin  
solutions. Izv.vys.ucheb.zav.; pishch.tekh. no.1:43-47 '60.  
(MIRA 13:6)

1. Kafedra fizicheskoy i kolloidnoy khimii Kiyevskogo tekhnolo-  
gicheskogo instituta pishchevoy promyshlennosti.  
(Amylopectin--Electric properties)

KURILENKO, O.D.; KABAN, A.P.; NEDUZHIY, A.A.

Investigation of the rheological properties of paste-yielding  
starch, amylose, and amylopectin solutions. Izv.vys.ucheb.zav.;  
pishch.tekh. 1:12-16 '61. (MIRA 14:3)

1. Kiievskiy tekhnologicheskiy institut pishchevoy promyshlennosti,  
Kafedra fizicheskoy i kolloidnoy khimii.  
(Starch) (Amylose) (Amylopectin)

KABAN, A.P., inzh.; KOVALEVSKAYA, Ye.I., inzh.; KURILENKO, O.D.,  
doktor khim. nauk

Electron microscope analysis of starch fractions in the  
presence of polyelectrolytes. Pishch. prom. no.2:26-31  
'65. (MIRA 18:11)

1. Kiyevskiy tekhnologicheskiy institut pishchevoy promyshlen-  
nosti.

KOVALEVSKAYA, Ye.I. [Kovalevs'ka, Ye.I.]; KABAN, A.P. [Kaban, O.P.];  
KURILENKO, O.D. [Kurylenko, O.D.]

Electron microscope studies of carboxymethylcellulose. Dop.  
AN URSR no.11:1490-1493 '65.

(MIRA 18:12)

1. Kiyevskiy tekhnologicheskiy institut pishchevoy promyshlen-  
nosti.

ACC NR: AT7006296

SOURCE CODE: UR/0000/66/000/000/0148/0152

AUTHOR: Kaban, A. P.; Ul'berg, Z. N.; Kharitinych, N. Ye.

ORG: none

TITLE: Study of the interaction of polystyrene molecules with highly dispersed metal particles

SOURCE: AN UkrSSR. Sintez i fiziko-khimiya polimerov (Synthesis and physical chemistry of polymers). Kiev, Naukova dumka, 1966, 148-152

TOPIC TAGS: metallocopolymer material, polystyrene, lead, bismuth, manganese, chemical dispersion

ABSTRACT: In order to establish the nature of the interaction between polystyrene macromolecules and colloidal particles of lead, bismuth and manganese, the systems formed were studied with an EM-5 electron microscope (at a magnification of 35000), and by x-ray diffraction, and the swelling of the corresponding interaction products was determined in 30% toluene + 70% methanol. It was found that the degree of swelling of metallocopolymers containing from 0.3 to 1.5% manganese and bismuth is almost one-half that of pure polystyrene. Highly dispersed lead had no effect on the swelling of polystyrene. The decrease in the degree of swelling of polystyrene is apparently due to denser packing of the macromolecules at the surface of the highly dispersed metals. An adsorptive-chemical interaction between the polymer macromole-

Card 1/2

SHEKA, I.A.; KARAN, A.P.

Dielectric permeability of aqueous solutions of glucose and  
saccharose. Trudy KTIFF no.17:179-185 '57. (MIRA 1):1)  
(Glucose) (Sucrose)

KABAN, B. and LEYKIS

"The Active Iron Electrode in Alkaline Solutions," *Acta Physicochimica*,  
21, No.5, 1946

KOLKUNTSOV, G., inzh.; KABAN, N., inzh.; SHISHKIN, R., inzh.

Reinforced concrete girders for buildings with flat roofs.  
Na stroi.Ros. 3 no.6:19-20 Je '62. (MIRA 16:7)  
(Reinforced concrete construction) (Roofs) (Beams and girders)

KABANETS, F.T.

KABANETS, F.T.,  
E. M. PRFIS, Colloid. J. 6, 323-32 (1940)

KABANETS, M.

~~KABANETS, M.~~

What ensures success? Fin.SSSR 16 no.4:52-54 Ap '55. (MIRA 8:3)  
(Finance)

KABANETS, M.; IVANITSKIY, V., starshiy nauchnyy sotrudnik

Increase profit in the potato and vegetable trade. Fin. SSSR  
(MIRA 11:11)  
19 no.10:35-39 0 '58.

1. Nachal'nik otdela finansirovaniya torgovli i zagotovok Minis-  
terstva finansov USSR (for Kabanets). 2. Nauchno-issledovatel'-  
skiy institut torgovli (for Ivanitskiy).  
(Ukraine—Vegetable trade)

KABANETS, M.

Supply eating establishments with raw materials and products  
at reduced prices. Sov.torg. no.3:28-30 Mr '59.  
(MIRA 12:4)  
1. Nachal'nik Otdela finansirovaniya torgovli i zagotovok  
Ministerstva finansov USSR.  
(Restaurants, lunch rooms, etc.)

KABANETS, M.

Seminar on trade financing in the Ukraine. Fin.SSSR 20 no.8:  
96 Ag '59. (MIRA 12:11)  
(Ukraine--Finance)

KABANETS, M.

Economic work of Ukrainian financial organs and control  
over trade. Fin.SSSR 20 no.12:26-33 D '59.  
(MIRA 12:12)

1. Nachal'nik otdela finansirovaniya torgovli i zagotovok  
Ministerstva finansov USSR.  
(Ukraine--Retail trade--Auditing and inspection)

KABANETS, Mikhail Nikitovich; LYUDSKOV, B.P., red.; FURMAN, G.V.,  
tekhn. red.

[Profitableness and hidden potentialities for increasing it in  
the fruit and vegetable trade] Rentabel'nost' torgovli plodami  
i ovoshchami i rezervy ee povyshenija. Moskva, Gos. izd-vo  
torg. lit-ry, 1961. 76 p.  
(MIRA 14:8)  
(Ukraine—Fruit trade—Finance) (Ukraine—Vegetable trade—Finance)

KABANETS, M.

Ways of reducing marketing costs and increasing incomes in trade.  
Fin. SSSR 22 no.8:44-49 Ag '61. (MIRA 14:8)  
(Ukraine—Retail trade—Finance)

GONCHAROV, K.F.; DOBROBORSKIY, S.A.; SIDOROV, P.N.;  
KOROSTASHEVSKIY, R.V.; KABANETS, Ya.P.; GROMYKO, Ye.M.;  
KARASIK, P.I.; GAZAROV, L.A.; YAKHIN, B.A.; GORIN,  
N.V., red.; POLYANSKAYA, Z.P., tekhn. red.

[Ball and roller bearings; catalog and handbook] Shariko-  
vye i rolikovye podshipniki; katalog-spravochnik. Izd.2.,  
ispr. i dop. Moskva, 1963. 379 p. (MIRA 17:3)

1. Moscow. TSentral'nyy institut nauchno-tehnicheskoy in-  
formatsii po avtomatizatsii i mashinostroyeniyu. 2. Nauchnyye  
sotrudniki Vsesoyuznogo nauchno-issledovatel'skogo konstruk-  
torsko-tehnologicheskogo instituta podshipnikovoy promysh-  
lennosti (for all except Gorin, Polyanskaya).

KABANIL'YAS

USSR/Microbiology - Medical and Veterinary  
Microbiology

F-6

Abs Jour : Ref Zhur-Biologiya, No 1, 1957, 774  
Author : Fernandes and Kabanil'yas  
Inst :  
Title : Sensibilization to Tuberculin Induced  
by Lepromin  
Orig Pub : Leprosy rev., 1955, 26, No 4, 163-167  
  
Abstract : Observations of 18 children in the ages  
of 8 months to 8 years who lived at home  
and had no contact with leprous patients  
were conducted. They exhibited a nega-  
tive Mantu reaction 1:10. These children  
were administered intracutaneously 0.1  
to 0.2 ml of bacillar lepromin prepared  
by the Dkharmender method or whole

Card 1/2

KABANKIN, S.I.; MAKTAZ, K.P.

Standardizing hydraulic cylinders for agricultural machinery.  
Trakt. i sel'khozmash. 30 no.10:23-25 0 '60. (MIRA 13:9)  
(Agricultural machinery--Hydraulic equipment)

KABANKIN, S.I., inzh.

Standardization and unification of hydraulic cylinders for  
agricultural machines. Trakt. i sel'khozmash. no.12:18-20  
D '64 (NIRA 18:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sel'sko-  
khozyaystvennogo mashinostroyeniya.

KABAN'KOV, V. YA.  
KABAN'KOV, V. Ya.

Age of ancient strata in the northeastern Siberian Platform. Trudy  
Nauch.-issl. inst. geol. Arkt. 89:38-41 '56. (MIRA 11:1)  
(Siberian Platform--Geology, Stratigraphic)

KABAN'KOV, V.Ya.

Principal results of the field work of the Birekta expedition of  
1958. Inform. biul. NIIGA no.2:61-65 '58. (MIRA 12:10)  
(Russia, Northern--Geology)

KABAN'KOV, V.Ya.

Oil prospecting in the Lena-Olenek area. Trudy NIIGA 92:  
120-133 '58. (MIRA 13:4)  
(Lena Valley--Petroleum geology)  
(Olenek Valley--Petroleum geology)

KABAN'KOV, V.Ya.

New stratigraphic data on lower and middle Cambrian sediments  
of the Olenek Upland (lower Olenek Valley). Trudy NIIGA 65:4-15  
'59. (MIRA 13:12)

(Olenek Valley--Geology, Stratigraphic)

KABAN'KOV, V.Ya.; RADIN, Ye.Ya.

Preliminary work results of the Birekta, Dzhelinda, and Anabar Expeditions in 1959. Inform.biul.NIIGA no.18:48-53 '60.

(MIRA 14:6)

(Anabar Valley—Diamonds) (Olenek Valley—Diamonds)

KABANNIK, A. O.

32787. Ob oligodendrogliomakh s vnutrisheludochkovym rostom. Trudy kiyevsk,  
Nauch.-issled. Peikhonevrol. In-ta, T. XII, 1949, s. 76-80, 210-11

SO: Letopis' Zhurnal'nykh Statey, Vol. 44, Moskva, 1949

VAYNSHTOK, I.B., kand.med.nauk; KABANNIK, A.O., kand.med.nauk

Complications in novocaine spinal anesthesia. Sov.med. 23 no.8:  
113-116 Ag '59. (MIRA 12:12)

1. Iz nevrologicheskoy kliniki (zav. - deystviteľ'nyy člen AMN SSSR  
prof. B.N. Man'kovskiy) Kiyevskogo meditsinskogo instituta.  
(PROCAINE anesth. & anelg.)  
(ANESTHESIA, SPINAL compl.)

POPOVA, O. I., KABANNIK, G.T.

Acid resistance and methods of analysis of titanium, zirconium, niobium and tantalum nitrides. Zhur. neorg. khim. 5 no.4:930-934 Ap '60. (MIRA 13:7)

1. Institut metallokeramiki i spetsial'nykh splavov AN USSR.  
(Titanium nitride) (Zirconium nitride)  
(Niobium nitride) (Tantalum nitride)

5/137/62/000/008/059/055  
A006/A101

AUTHORS: Popova, O. I., Kabannik, G. T.

TITLE: Chemical properties and analysis of some nitrides

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 8, 1962, 7, abstract 8K44  
("Byul. In-t metallokeram. i spets. splavov AN UkrSSR", 1961, no. 6,  
64 - 68)

TEXT: The authors investigated the solubility of Ti, Zr, Nb, Ta and Cr nitrides in various acids, their mixtures and alkaline solutions. It is shown that maximum stability against the effect of different solvents is offered by Ta and Cr nitrides (CrN), and least stability by Zr and Cr-nitrides (Cr<sub>2</sub>N). Methods of analyzing some nitrides are given. For instance, when analyzing Si nitride, the batch is alloyed with Na<sub>2</sub>O<sub>2</sub>. The cold melt is lixiviated with water and further analysis is conducted with the use of the hydrochloride method. The determination of free Si is based on its solubility in 1% NaOH solution. The Si nitride is then not dissolved. In the solution obtained the Si content is determined by the colorimetric method from the yellow color of the molybdenum silicic acid.

[Abstracter's note: Complete translation]  
Card 1/1

L. Vorob'yeva

*Chastotet metallokeramiki i spetsial'nykh splavor'*  
AN USSR

KABANNIK, G.T.

9

PHASE I BOOK EXPLOITATION

SOV/6030

Samsonov, G. V., Corresponding Member, Academy of Sciences UkrSSR;  
A. T. Pilipenko, Doctor of Chemical Sciences, Professor; T. N.  
Nazarchuk, Candidate of Chemical Sciences; O. I. Popova, Candi-  
date of Chemical Sciences; and T. Ya. Kosolapova, V. A. Obolon-  
chik, G. Kh. Kotlyar, L. N. Kuchay, V. P. Kopylova, G. T. Kaban-  
nik, A. Kh. Klibus, K. D. Modylevskaya, and S. V. Radzikovskaya.

Analiz tugoplavkikh soyedineniy (Analysis of Refractory Compounds)  
Moscow, Metallurgizdat, 1962. 256 p. 3250 copies printed.

Ed.: Ye. A. Nikitina; Ed. of Publishing House: G. M. Kamayeva;  
Tech. Ed.: A. I. Karasev.

PURPOSE: This book is intended as a laboratory manual for personnel  
in plant laboratories of the machinery, chemical, and aircraft  
industries and scientific research institutes. It can also be  
used by chemistry students at universities and schools of higher  
education.

Card 1/4

Analysis of Refractory (Cont.)

SCOV/6030

**COVERAGE:** The book contains data from the literature and from laboratory research on the chemical and mechanical properties, crystalline structure, chemical analysis, production, and industrial and other applications of silicon carbide and other refractory compounds. Methods of determining the basic components of refractory compounds (carbon, boron, nitrogen, and silicon) are reviewed and detailed methods for the chemical analysis of all presently known refractory compounds given. The authors are associated with the Institut metallokeramiki i spetsial'nykh splavov, AN SSSR (Institute of Powder Metallurgy and Special Alloys, Academy of Sciences USSR). No personalities are mentioned. There are 327 references: 175 Soviet and the remainder mainly English and German.

TABLE OF CONTENTS [Abridged]:

Foreword	7
Ch. I. General Information on Refractory Compounds	9
Card 2/4	

Analysis of Refractory (Cont.)

SOV/6030 9

Ch. II. Chemical Properties of Refractory Compounds	48
Carbides	48
Nitrides	60
Borides	64
Silicides of transition metals of Groups IV, V, and VI	74
Phosphides of transition metals	79
Sulfides of rare earths	84
Nonmetallic compounds [B <sub>4</sub> C, SiC, Si <sub>3</sub> N <sub>4</sub> , BN, BP]	86
Ch. III. Methods of Determining Basic Components of Refractory Compounds	99
Ch. IV. Analysis of Refractory Compounds	143
Carbides of transition and alkaline earth metals	143
Nitrides	174
Borides	181
Silicides	210
Rare-earth sulfides	220

Card 3/4

**Analysis of Refractory (Cont.)**

SCV/6030

Phosphides	226
Nonmetallic compounds	229
Appendix: [Water Vapor Pressure (mm Hg) at 15 to 35°C (Table)]	248
References	249
AVAILABLE: Library of Congress	
SUBJECT: Metals and Metallurgy	

Card 4/4

BN/pw/bmc  
10-30-62

KABANNIK, G.T.; NAZARCHUK, T.N.

Volumetric determination of aluminum in alloys. Zav.lab. 28  
no.5:546-547 '62. (MIRA 15:6)

1. Institut metallokeramiki i spetsial'nykh splavov AN USSR.  
(Aluminum alloys)

SAMSONOV, G.V.; PILIPENKO, A.T., prof., doktor khim. nauk; NAZARCHUK, T.N., kand. khim. nauk; Prinimali uchastiye: POPOVA, O.I., kand. khim. nauk; KOSOLAPOVA, T.Ya.; OBOLONCHIK, V.A.; KOTLYAR, G.Kh., mladshiy nauchnyy sotr.; KUCHAY, L.N.; KOFYLOVA, V.P.; KABANNIK, G.T.; KLIBUS, A.Kh.; MODYLEVSKAYA, K.D.; RADZIKOVSKAYA, S.V.; NIKITINA, Ye.A., red.; KAMAYEVA, O.M., red. izd-va; KARASEV, A.I., tekhn. red.

[Analysis of high-melting compounds] Analiz tugoplavkikh soedinenii. Moskva, Metallurgizdat, 1962. 256 p. (MIRA 15:7)

1. Chlen-korrespondent Akademii nauk USSR (for Samsonov).  
(Intermetallic compounds—Analysis)  
(Nonmetallic materials—Analysis)

NAZARCHUK, T.N.; POPOVA, O.I.; KUGAY, L.N.; DZERZHANOVSKAYA, Ye.V.;  
KABANNIK, G.T.; BOREMSKAYA, S.F.; CHUGUNNAYA, N.K.

Analysis of rare alloys with certain metals and oxides. Zhur.  
anal. khim. 19 no.8:980-984 '64.

(MIRA 17:11)

1. Institut metallokeramiki i spetsial'nykh splavov AN SSSR, Kiyev.

KABANNIKOV, N.P.

Hemosporidin treatment of leptospirosis in cattle. Veterinariia.  
36 no.9:24 S '59. (MIRA 12:12)

1. Glavnyy veterinarnyy vrach sovkhosa imeni Gor'kogo, Krasnodarskogo  
kraya. (Leptospirosis) (Urea)

*KABANOV, A.A.*

AUTHOR: Kabanov, A.A. 3-1-16/32

TITLE: Complex Field Practice in Physical Geography (Kompleksnaya polevaya praktika po fizicheskoy geografii)

PERIODICAL: Vestnik Vysshey Shkoly, 1958, # 1, pp 53-54 (USSR)

ABSTRACT: The article describes practical training carried out by the 3rd course students of the Geographical Faculty of the Krasnoyarsk Pedagogical Institute (Krasnoyarskiy pedagogicheskiy institut). The training consisted of territorial investigation and regional studies as they would be conducted by a village school. The students were divided into several groups and given the task to investigate the geology and geomorphology of the territory, the climatic peculiarities and the hydrology of the selected kolkhoz, its soil, flora and fauna. The investigations were made according to a methodical plan. This kind of training has been carried out every year since 1955.

ASSOCIATION: Krasnoyarsk Pedagogical Institute (Krasnoyarskiy pedagogicheskiy institut)

AVAILABLE: Library of Congress

Card 1/1

KABANOV, A.A.

A mine of high labor productivity, Ugol' 36 no.7:1-2 Jl '61.  
(MIRA 15:2)

1. Glavnnyy inzh. shakhty "Surtaikha" tresta Kiselevskugol'.  
(Kuznetsk Basin--Coal mines and mining--Labor productivity)

ACCESSION NR: AP4028467

8/0181/64/006/004/1249/1251

AUTHORS: Trubitsyn, A. M.; Kabanov, A. A.; Boldyrev, V. V.; Makhovik, A. K.

TITLE: The nature of electrical conductivity in the permanganates of alkali metals

SOURCE: Fizika tverdogo tela, v. 6, no. 4, 1964, 1249-1251

TOPIC TACS: electric conductivity, alkali permanganate, thermoelectromotive force, transference number

ABSTRACT: The type of conductivity in ionic crystals of permanganate type was established by investigating the electrical conductivity, the transference numbers, and the thermoelectromotive force. The samples were prepared from chemically pure materials pressed at room temperature under a pressure of  $10^4$  kg/cm<sup>2</sup> for 4 minutes. It was found that the electrical conductivity is practically the same at high temperatures for  $\text{KMnO}_4$ ,  $\text{RbMnO}_4$ , and  $\text{CsMnO}_4$ , but that the activation energies are different for each. The  $\text{MnO}_4^-$  is much larger than the cations, and this, with the experimental data, indicates that the electrical conductivity of the indicated compounds is nonionic and that the cations are not responsible for the electrical conductivity. In all these permanganates the thermoelectromotive force proved to be

Card 1/2

L 24454-65 EWT(1)/EPA(c)-2/EEC(t)/EEC(b)-2 Pt-10 D/P(c) 00

ACCESSION NR: AP5002575

8/0078/81/038/012/2888/2098

AUTHOR: Zakharov, Yu. A. : Kabanov, A. A.

TITLE: The effect of admixtures of plumbous and carbonate ions on the conductivity, permittivity and dielectric loss angle of silver azide

SUBJECT: CHEMICAL INDUSTRIAL INSTITUTE, THE STATE AND STATE PLANNING COMMITTEE, RUSSIA

**TOPIC TAGS:** silver azide, plumbous ion, carbonate ion, electrical conductivity, permittivity, dielectric loss angle, photochemical stability, photography

**ABSTRACT:** The effect of additions of  $Pb^{2+}$  and  $CO_3^{2-}$  ions on the conductivity, permittivity and dielectric loss angle of silver azide was studied experimentally in order to prove the theory advanced by Zakharov et al. for the change in photochemical stability observed on recrystallization of silver azide with  $Ag_2CO_3$  (Kinetika i Kataliza v S. S. 1964). Specimens containing 0.2-6 mol %  $Pb^{2+}$  or 0.1-3 mol %  $CO_3^{2-}$  were prepared. The addition of  $Pb^{2+}$  to silver azide up to 0.2-3 mol % with saturation of the effect reached at 0.2 mol %  $Pb^{2+}$ . The addition of  $CO_3^{2-}$  up to 0.1-3 mol % with saturation of the effect reached at 0.1-1 mol %  $CO_3^{2-}$ . The effect of  $Pb^{2+}$  on the photochemical stability of silver azide is discussed.

Card 1/2

L 24494-65

ACCESSION NR: AP5002575

signed for explosive compounds, increased linearly with the concentration of  $\text{Cr}_2\text{O}_7^{2-}$ , passed through a minimum at  $\text{Cr}_2\text{O}_7^{2-} = 0.005 \text{ M}$

ZAKHAROV, Yu.A.; KABANOV, A.A.; TRUBITSYN, A.M.

Effect of a fixed electric field on the thermal decomposition  
of silver oxalate. Izv.vys.ucheb.zav.; khim.i khim.tekh. 8  
no.4:529-532 '65. (MIRA 18:11)

1. Tomskiy politekhnicheskiy institut imeni Kirova, kafedra  
radiatsionnoy khimii.

KABANOV, A.F.

Straight-way cutting tool with a chip breaker. Stan. 1 instr.  
31 no.9140 S '60. (MIRA 13:9)  
(Metal-cutting tools)

KABANOV, A.F.; GALUSTOV, S.G.; LESETSKIY, V.A.; SOKOLOVSKIY, B.M.

Objectives of petroleum industry workers. Bezop. truda v prom.  
5 no.9:8-9 S '61. (MIRA 14:10)

1. Glavnoye upravleniye neftyanoy i gazovoy promyshlennosti  
Vserossiyskogo Soveta Narodnogo Khozyaystva RSFSR.  
(Petroleum industry) (Automation)